

REMARKS

This paper is filed in response to the final Office Action mailed on May 4, 2005. Claims 30, 41-43 and 46-49 have been cancelled, claims 31-40, 44 and 50-51 have been amended; claims 31-40, 44-45 and 50-51 remain pending.

Applicants respectfully submit that this amendment is in full compliance with Rule 116 because it reduces the total number of pending claims, traverses all rejections directed toward now-cancelled independent claims 30 and 46, thereby leaving only claims 50 and 51 as independent claims, and reduces the rejections to a single rejection based upon the combination of Yano and Carpio. Because the issues have been narrowed, simplified and the number of claims reduced and no new issues have been raised, Applicants respectfully submit that his amendment is in full compliance with Rule 116 and an early entry of this amendment is respectfully requested.

Turning to the rejections based upon the prior art, all claims stand rejected under 35 U.S.C. § 103 as being obvious in view of various combinations of prior art references including:

(A) U.S. Patent Application Publication No. 2003/0166337 ("Wang '337"), U.S. Patent Application Publication No. 2003/0170991 ("Wang '991"), U.S. Patent Application Publication No. 2003/0076932 ("Dirksen"), applicants' admitted prior art (AAPA) and U.S. Patent Application Publication No. 2002/0197935 ("Mueller");

(B) Wang '991, Dirksen, Wang '337, and AAPA or Mueller;

(C) U.S. Patent No. 6,740,590 ("Yano"), U.S. Patent No. 5,866,031 ("Carpio"), and AAPA or Mueller; and

(D) Yano and Carpio.

Rejections A-C are all traversed or either rendered moot by the cancellation of independent claims 30 and 46. With only independent claims 50 and 51 in the case and currently amended, Applicants respectfully submit that only rejection D is relevant at this time.

With respect to the rejection of claims 50 and 51 as being obvious in view of the hypothetical combination of Yano and Carpio, Applicants respectfully submit that this rejection is improper for the following reasons. Specifically, to establish a *prima facie* case of obviousness, under MPEP §§ 2142 and 2143,

[t]o establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure.

Citing, *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991); *see also* MPEP § 2143-§ 2143.03 for decisions pertinent to each of these criteria.

Claims 50 and 51 are directed toward the formation of a RTN thin film using a slurry that, in the case of claim 50, consists essentially of an oxidant, an abrasive, an acid, a buffer solution and which has a PH ranging from 1 to 3. In claim 50, the oxidant consists essentially of CAN, and the abrasive consists essentially of inorganic particles (i.e., not polymers). In the case of claim 51, the slurry consists essentially of CAN, and abrasive, an acid, a buffer solution and water. The acid consists essentially of nitric acid, and the abrasive consists essentially of inorganic particles (i.e., not polymers).

No combination of Yano and Carpio teaches or suggests the slurries recited in independent claims 50 and 51 and therefore no *prima facie* case of obviousness is established for claims 50 and 51 and for remaining claims depending therefrom. Specifically, Applicants respectfully submit that using the transition term "consisting essentially of" for the recitation of the slurries in claims 50 and 51 traverses the rejection based upon Yano and Carpio and renders these rejections moot.

Yano discloses a slurry that contains polymer particles modified by specific functional groups so that the zeta potential is positive. The Yano slurry also includes inorganic particles that are either both silica or ziconia (see column 8, lines 11-15). Further, the pH range for Yano is preferably from 3 to 12 (column 27, lines 22-24), outside the range of claims 50 and 51.

Therefore, Yano is not a sufficient base reference because it teaches away from using only inorganic particles without its accompanying polymer particles as illustrated in Comparative Examples 1A and 1C. Specifically, Yano teaches that the use of inorganic particles without the polymer particle results in a low polishing rate and a high number of

scratches. See Comparative Example C at columns 20-21. Further, Yano teaches a higher pH than that recited in claims 50 and 51. Yano also fails to teach or suggest the use of a buffer solution.

In an attempt to supplement Yano, the patent office relies upon Carpio. However, Carpio is only directed toward buffered slurries for polishing aluminum or titanium and which comprise ammonium peroxydisulfate oxidant in a buffer and which have a pH ranging from 4 to 9. Thus, the pH of Carpio is outside of the range of independent claims 50 and 51 and cannot be used to supplement the deficiency of Yano in this regard. Further, Carpio does not teach or suggest the use of inorganic particles without polymer particles in order to overcome the deficiencies of Yano.

Therefore, no combination of Yano and Carpio teaches or suggests a slurry consisting essentially of an abrasive that consists essentially of inorganic particles and which has a pH ranging from 1 to less than 3. Further, the abrasive components of Yano and Carpio are completely different and Applicants therefore respectfully submit that the hypothetical combinations not possible given the fact that Carpio teaches an extremely hard abrasive such as alumina or fumed alumina (column 5, lines 45-47) and Carpio teaches the softening of his abrasive with polymer particles. See column 6, line 66 to column 70, line 6 of Yano where he specifically teaches using polymer particles that are sphere to avoid scratching.

In short, the amendments to claims 50 and 51, particularly the amendments to the pH range and the use of the more restrictive "consisting essentially of" transition term renders the obviousness rejection based upon Yano and Carpio moot. An early entry of this amendment under Rule 116 and an allowance of this application is respectfully requested.

The Commissioner is authorized to charge any fee deficiency required by this paper, or credit any overpayment, to Deposit Account No. 13-2855.

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Respectfully submitted,

By

Michael R. Hull

Registration No.: 35,902

MARSHALL, GERSTEIN & BORUN LLP

233 S. Wacker Drive, Suite 6300

Sears Tower

Chicago, Illinois 60606-6357

(312) 474-6300

Attorney for Applicant